Hadley Learning Community Primary Phase Calculation Policy

+ Addition +

Key Vocabulary: +, altogether, increase, plus, add, double, addition, sum, total

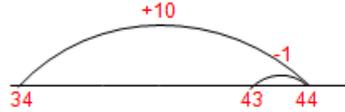| Stage A	Stage B	Stage C

Counting objects, partitioning and recombining sets using practical apparatus.
 	
Understand that the number gets bigger.
 	
Addition is commutative. (3+6 = 9 and 6+3 = 9)
 	
Use number tracks to develop counting skills, forwards and backwards.
 	
Drawing pictures to record their mathematical thinking.
 	
Teacher modelling of number sentences and addition as commutative.
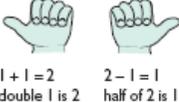 	
1 + 1 = 2 — double 1 is 2
2 − 1 = 1 — half of 2 is 1
2 + 2 = 4 — double 2 is 4
4 − 2 = 2 — half of 4 is 2
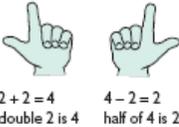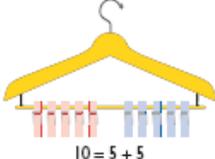 	
10 = 5 + 5
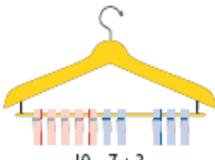 	
10 = 7 + 3
 	
We have 10 pegs on the coathangers, how can we split them into 2 groups? Is there another way? How can you be sure you have got them all?
 	
Once numbers can be written, number sentences can be recorded.
 	
To have experience of '=' sign as last stage in calculation.
	Key skills of knowing number bonds to 10 and within 20.
	
	Develop knowledge of fact families, e.g. 2, 5, 7.
	
	7 = 5 + 2 2 + 5 = 7
	7 − 2 = 5 7 − 5 = 2
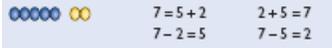	
	Counting forwards and recording on a number line.
	
	All answers to be recorded in a number sentence following any informal recording.
	
	0 1 2 3 4 5 6 7 8 9 10
	
	0 1 2 3 4 5 6 7 8 9 10
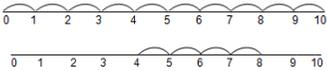	
	leading to
	+2 +2
	8 9 10 11 12
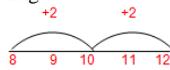	
	Children to show notation
	
	Addition is the inverse of subtraction.
	
	Using shapes to represent a missing number.
	
	□ + ○ = △ □ + □ = △
	5 + 4 = 9 6 + 6 = 12
	
	Adding more than two numbers
	
	Strategy to include looking for facts or bonds that are useful e.g. bonds up to and including 10, doubles or adding 10 to a given number.
	
	6 + 3 + 4 = 13
	  10
	
	6 + 3 + 4 + 7 + 2 = 22
	  10 10
	
	Compensation strategy
	+10
	5 −1
	   14 15
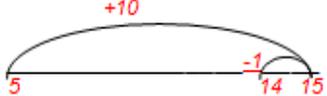	
	Doubles then near doubles
	5 + 6 =
	5 + 5 + 1 = 11
		Combining sets to make a total.
		
		Progression in use of informal recording including the number line.
		
		Answers to be recorded as part of a number sentence.
		
		Reordering strategy.
		
		Adding:
		TU + TU = TU
		and when secure moving on to
		TU + TU = HTU
		HTU +TU = HTU
		
		+10 +10 +1 +1 +1 +1
		58 68 78 79 80 81 82
		
		24 + 58 =
		adding in 10s and 1s
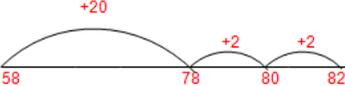		
		+20
		+2 +2
		58 78 80 82
		add 20, bridge the 10
		+20
		+4
		58 78 82
		add 20 and then 4
		
		Record partitioned steps in number sentences underneath each other and add mentally.
		
		24+58=
		20+50=70
		4+ 8=12
		70+12=82
		
		Introduce column addition without crossing the boundary
		
		  24 (20+4)
		+53 (50+3)
		  77 (70 + 7)
		
		Check answers by repeating addition in different order or by an equivalent calculation.
		
		Compensation strategy
		+10
		−1
		34 43 44
		
		Adding zero leaves a number unchanged/ adding ten to a number keeps units digit constant.

Stage D	Stage E	Stage F	Stage G

Counting on in multiples of 100s, 10s or units using a number line.
 	
HTU + TU
Cross the 10s/100s boundary.
 	
86 +57
 	
+
 	
80   6   50   7
 	
+
 	
Start with least significant digit
  67
+ 24
  11 (7+4)
+ 80 (60+20)
  91
 	
"7 add 4 equals 11 and 60 add 20 equals 80. 1+ 0 = 1 and 1 ten + 8 tens = 9 tens"
 	
    625
+   48
    13 (5+8)
    60 (20 + 40)
+ 600 (600 + 0)
    673
 	
All language in the context of the place value and the mental addition of the totals to be done in any order.
	Continue with HTU + HTU, then extend to ThHTU + ThHTU.
	
	Approximate using the most significant digit, rounding skills.
	
	Check using the inverse.
	
	Refer to the carried digit as a ten or a hundred.
	
	  587
	+ 475
	  1062
	  1 1
	
	"7 add 5 equals 12. That's 2 units and 1 ten to carry over.
	80 add 70 equals 150 and the one ten to carry makes 160. That's 6 tens and 100 to carry over. 500 add 400 equals 900 and the one hundred to carry makes 1000"
	
	  7648
	+ 1486
	    14
	  120
	  1000
	+8000
	  9134
	
	  7648
	+ 1486
	  9134
	  1 1 1
	
	  12·45
	  7·36
	+ 24·50
	  0·11
	  1·20
	  13·00
	  30·00
	  44·31
		Add with increasingly large numbers using the compact method.
		
		Extend methods to include decimals to two decimal places.
		
		  34657
		+87689
			Promote decision making so that pupils choose an appropriate method/strategy.
			
			Continue the use of informal methods and number lines.
			
			Ensure understanding of standard written method.
			
			Continue ThHTU + ThHTU then calculations with any number of digits.
			
			Approximate using the most significant digits and a feel for the 'whole' number.
			
			Appropriate teaching/use of the calculator including interpreting the display, e.g. money or measures.
			
			Calculator display 0.37 is then interpreted as 37p in the context of money. Remind 4p = 0.04 Calculator display £1.4 is interpreted as £1.40
			    7648
			+ 1486
			    9134
			    1 1 1
			Decimal points are fixed on the line with digits in the squares.
			
			Decimals, fill 'empty columns' with zeros.
			
			124·9 + 7·25
			
			    124·90
			+ 7·25
			    132·15
			    1 1

Thank you for your interest in helping you child with their mathematics at home. At Hadley Learning Community our aim is to provide all children with practical mathematical skills which they will be able to use through life. We recognise that your help at home will support children's learning and enthusiasm for the subject.

To make it easier to use the calculation strategy has been split into the four different operations, addition, subtraction, multiplication and division. Each section of the policy is laid out in the same way with the stages of development and key skills for each stage. Your child may be at a different stage for different operations so may be on stage C for addition but using stage E for division. This will vary from child to child so the best starting place is your own child. At times when working with larger numbers or solving some problems children may use an earlier stage which will support their understanding.

As a parent you can encourage your child to learn their key facts for each operation through regular practise and questioning them when you are out and about. You have the opportunity to use maths in real life which will greatly help their understanding. So, whether they help you calculate how many party bags you need for a party or help you to make a cake at the weekend they will be learning maths in real life. On the cover of this booklet is a list of the vocabulary we use for addition which will help you to understand word problems they may encounter.

Your child's teacher will be happy to talk to you about any aspect of this policy you do not understand.

Thank you for your ongoing support.